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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,926	03/12/2001	Salvatore Melis	Q63447	7232

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EXAMINER

BURCH, MELODY M

ART UNIT PAPER NUMBER

3683

DATE MAILED: 07/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,926

Applicant(s)

MELIS, SALVATORE

Examiner

Melody M. Burch

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the pair of mechanical operating members as first claimed in claim 1, the control means and sensor means as first claimed in claim 4, and the ring gear claimed in claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: element number 21. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect can be deferred until the application is allowed by the examiner.

Specification

3. The disclosure is objected to because of the following informalities:

- It fails to include the headings particularly to US Patent format such as "Summary of Invention", "Brief Description of Drawings", etc.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claim 1. Claim 1 recites the limitations "the servo-assisted operation", "the transmission ratios in lines 1 and 5, respectively. There is insufficient antecedent basis for this limitation in the claim.

Re: claim 4. Claim 4 recites the limitations "the control means" in lines 2-3 and "these elements" in line 3 from the bottom, and "the elongate transmission elements" in line 4 from the bottom (Examiner notes that the references back to the "pair of elongate mechanical transmission elements" should be consistent including but not limited to claim 2). There is insufficient antecedent basis for this limitation in the claim. Also in claim 2, it is unclear whether the "a transmission ratio" in lines 2-3 from the bottom of the claim is different or the same as the transmission ratios claimed in claim 1.

Re: claim 5. Claim 5 recites the limitations "the engine compartment" in line 4 and "the motor vehicle" in line 3 from the bottom. There is insufficient antecedent basis for this limitation in the claim.

Re: claims 7 and 11. It is unclear to the Examiner whether the "a cable", "a flexible cable" and "a respective push-pull cable" in the claims are different or the same as or representing portions of the elongate mechanical transmission elements of claims 1 and 3. Clarification is required.

Re: claim 8. Claim 8 recites the limitations "the electromechanical type" in the last line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Re: claim 12. It is unclear to the Examiner whether the "gearbox operating unit" of claim 12 is different or the same as the "unit" of claim 1.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5142927 to Amedei et al.

Re: claims 1-3. Amedei et al. show in figure 1 a unit 1 for the servo-assisted operation of a motor-vehicle gearbox as disclosed in col. 2 lines 34-35 having a pair of mechanical operating members 5 for selection and engagement, respectively, the combined movement of which brings about the engagement of one of the transmission ratios of the gearbox, the unit comprising actuator means 4 which can control via

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elements 27,38 the combined movement of the mechanical operating member in response to the position of remote gearshift means 2 of the gearbox, wherein the actuator means are remote from the gearbox and are connected to the mechanical operating members by means of elongate mechanical transmission elements 3.

Re: claim 12. Amedei et al. disclose in col. 1 lines 7-9 the use of a motor vehicle, particularly an agricultural tractor including a gearbox operating unit 1 according to claim 1.

8. Claims 1-3, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 1630076 to Schmidt.

Re: claims 1-3 and 12. Schmidt shows in figure 1 a unit 1 for the servo-assisted operation of a motor-vehicle gearbox 22 having a pair of mechanical operating members 25 for selection and engagement, respectively, the combined movement of which brings about the engagement of one of the transmission ratios of the gearbox, the unit comprising actuator means 11,12,17 shown in figure 2 which can control via elements 23 the combined movement of the mechanical operating member in response to the position of remote gearshift means 2 of the gearbox, wherein the actuator means are remote from the gearbox and are connected to the mechanical operating members by means of elongate mechanical transmission elements 19.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amedei et al. in view of US Patent 6196078 to DeJonge et al. DeJonge et al. teach in figure 1 the use of a gearbox operating unit 20,24 including an electronic control unit 23 operatively interposed between a control means 26 and sensor means 24' which can detect the instantaneous position of remote gearshift means 24" of the gearbox 21, the control unit being arranged to process the signals coming from the sensor means and to send operating signals to the control means in order to bring about the movement of an elongate transmission element 22 in a manner such that the element brings about the engagement of a transmission ratio of the gearbox which corresponds to the instantaneous position of the remote gearshift means. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the unit of Amedei et al. to have included sensor means and an electronic control unit interposed between the sensor means and the control means, as taught by DeJonge et al., in order to provide a means of sensing the position of gearshift means 2 and to provide a means of controlling the actuator/control means of the unit based on the sensed position to effect gear movement in the transmission gearbox.

11. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amedei et al. in view of US Patent 6196078 to DeJonge et al. as applied to claim 4 above, and further in view of US Patent 1630076 to Schmidt and US Patent 6052283 to Kawakita. Schmidt teaches in figure 1 the use of a remote gearshift means 2 and actuator means 11,12,17 as shown in figure 2 being disposed in an environment

separated from the engine compartment shown below fireproof partition 20, elongate mechanical transmission elements being disposed predominantly in the engine compartment.

Kawakita teaches in col. 1 lines 13-24 the use of an electronic control unit being mounted in the passenger compartment of a vehicle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the unit of Amedei et al., as modified, to have included the remote gearshift means, the electronic control unit, and the actuator means in an environment separated from the engine compartment, as taught by Schmidt and Kawakita, in order to provide a means of preventing the components from coming in contact with the excessive heat, water, and dirt typical to the engine compartment to help maintain the reliability of the components.

12. Claims 8, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amedei et al. in view of US Patent 5590744 to Belmond.

Re: claim 8, 9, and 11. Belmond teaches in figure 1 the use of a means for controlling the movement of elongate elements 8,9 being of an electromechanical type including an electric motor 16 which can rotate a cylindrical casing 3a,3b having an internal thread in engagement with a screw element 4,5 (the screw element includes a coaxial and integral shaft or cylindrical portion of the screw element having the function of a rectilinear guide for the movement of the screw element, particularly the external threads of the screw element, relative to the internal thread of the cylindrical casing, an end of the coaxial shaft being connected via element 12 to an end of a flexible cable 8,9

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of a respective push-pull cable 8,13,9,14) connected to an end of respective elongate elements 8,9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the hydraulic means for controlling the elongate elements of Amedei to have included an electromechanical type, as taught by Belmond, in order to provide an alternate source of power to effect translation of the elongate members to effect gear changes in the transmission gearbox. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the actuator/control means such that it included an electric motor for each of the elongate elements in order to provide redundancy which maintains the function of at least one actuator/control means in the presence of failure of another actuator/control means.

13. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amedei et al. in view of US Patent 5590744 to Belmond as applied to claim 9 above, and further in view of US Patent 6240797 to Morishima et al. Amedei et al., as modified, teach the use of the electric motor having a drive shaft 10 to which a pinion 15 is keyed, the pinion meshing with a ring gear 2 connected to the outer surface of the cylindrical casing 3a,3b (See Belmond figure 1). Morishima et al. teach in figure 1 the use of an drive shaft to which a pinion 12 is keyed, the pinion meshing with a gear (in the area of the lead line associated with element number 10) connected for rotation with another gear (in the area to the left of the lead line associated with element number 10 shown to mesh with element 9) which meshes with a ring gear 9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the gear

train of Amedei et al., as modified, to have included a gear and another gear, as taught by Morishima et al., in order to provide a means achieving a desired gear ratio as determined by routine experimentation which, in turn, effects the translation characteristics of the elongate mechanical transmission elements.

14. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt in view of US Patent 6196078 to DeJonge et al. DeJonge et al. teach in figure 1 the use of a gearbox operating unit 20,24 including an electronic control unit 23 operatively interposed between a control means 26 and sensor means 24' which can detect the instantaneous position of remote gearshift means 24" of the gearbox 21, the control unit being arranged to process the signals coming from the sensor means and to send operating signals to the control means in order to bring about the movement of an elongate transmission element 22 in a manner such that the element brings about the engagement of a transmission ratio of the gearbox which corresponds to the instantaneous position of the remote gearshift means. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the unit of Schmidt to have included sensor means and an electronic control unit interposed between the sensor means and the control means, as taught by DeJonge et al., in order to provide a means of sensing the position of gearshift means 2 and to provide a means of controlling the actuator/control means of the unit based on the sensed position to effect gear movement in the transmission gearbox.

15. Claims 5, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt in view of US Patent 6196078 to DeJonge et al. as applied to claim 4 above, and further in view of US Patent 6052283 to Kawakita.

Re: claims 5 and 6. Schmidt shows in figure 1 the use of a remote gearshift means 2 and actuator means 11,12,17 as shown in figure 2 being disposed in an environment separated from the engine compartment shown below fireproof partition 20, elongate mechanical transmission elements being disposed predominantly in the engine compartment.

Kawakita teaches in col. 1 lines 13-24 the use of an electronic control unit being mounted in the passenger compartment of a vehicle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the unit of Schmidt, as modified, to have included the electronic control unit in an environment separated from the engine compartment, as taught by Kawakita, in order to provide a means of preventing the components from coming in contact with the excessive heat, water, and dirt typical to the engine compartment to help maintain the reliability of the electronic components of the electronic control unit.

Re: claim 7. Schmidt show the fireproof partition 20 constituting a reaction element for a sheath 27 for the sliding of a cable 19 of a respective push-pull cable.

16. Claims 8, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt in view of US Patent 5590744 to Belmond.

Re: claim 8, 9, and 11. Belmond teaches in figure 1 the use of a means for controlling the movement of elongate elements 8,9 being of an electromechanical type

including an electric motor 16 which can rotate a cylindrical casing 3a,3b having an internal thread in engagement with a screw element 4,5 (the screw element includes a coaxial and integral shaft or cylindrical portion of the screw element having the function of a rectilinear guide for the movement of the screw element, particularly the external threads of the screw element, relative to the internal thread of the cylindrical casing, an end of the coaxial shaft being connected via element 12 to an end of a flexible cable 8,9 of a respective push-pull cable 8,13,9,14) connected to an end of respective elongate elements 8,9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the hydraulic means for controlling the elongate elements of Schmidt to have included an electromechanical type, as taught by Belmond, in order to provide an alternate source of power to effect translation of the elongate members to effect gear changes in the transmission gearbox. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the actuator/control means such that it included an electric motor for each of the elongate elements in order to provide redundancy which maintains the function of at least one actuator/control means in the presence of failure of another actuator/control means.

17. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt in view of US Patent 5590744 to Belmond as applied to claim 9 above, and further in view of US Patent 6240797 to Morishima et al. Schmidt, as modified, teaches the use of the electric motor having a drive shaft 10 to which a pinion 15 is keyed, the pinion meshing with a ring gear 2 connected to the outer surface of the cylindrical casing 3a,3b

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(See Belmond figure 1). Morishima et al. teach in figure 1 the use of an drive shaft to which a pinion 12 is keyed, the pinion meshing with a gear (in the area of the lead line associated with element number 10) connected for rotation with another gear (in the area to the left of the lead line associated with element number 10 shown to mesh with element 9) which meshes with a ring gear 9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the gear train of Schmidt, as modified, to have included a gear and another gear, as taught by Morishima et al., in order to provide a means achieving a desired gear ratio as determined by routine experimentation which, in turn, effects the translation characteristics of the elongate mechanical transmission elements.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents: 5321993 to Herzog et al., 5067362 to Holdenried, 4916964 to Crack, 4619152 to Suzuki, 4483211 to Hurlow, 4676350 to Shinokawa et al., 4872365 to Wolf, 5078242 to Ratke et al., 4561527 to Nakamoto et al., 3729070 to Le Marchand, 5938562 to Withey, 5860303 to Droz et al., 2902881 to Loofbourrow, 4916965 to Wardenier et al., 6386338 to Powrozek, 5749264 to Broadbent, and 5180038 to Arnold et al. teach the use of translating elongate mechanical elements. European patent EP-0405550 teaches the use of a unit having control means, sensor means, actuating means, and transmission means. German Patent DE-19839855

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teaches the use of a servo-assisted gear selector used to minimize the manual strength required for gear selection.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

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July 15, 2002


JACK LAVINDER
SUPERVISORY PATENT EXAMINER
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7/15/02